

DTN ATTACHMENT

Destroy the superseded DCN that is listed on in the DCN comment column (right hand column). Place the attached DCN's in front the appropriate procedure in your manuals. Destroy the old revision of Table of Contents when replacing with the attached TOC's.

EMD Operating Procedures Volume I - Field Operations

DCN #	DCN Title	DCN Comment
FO.03 92.02	Replace triple rinse with double rinse	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.03 91.01
FO.05 92.01	Clarify protected area	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.05 91.01
FO.06 92.02	Clarify protected area	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.06 91.02
FO.07 92.01	Clarify definition of potentially contaminated	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.07 91.01
FO.07 92.02	Clarify work area characteristics	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.07 91.02
FO.08 92.01	Clarify spraying requirement	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.08 91.03
FO.08 92.02	Clarify protected area	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.08 91.02
FO.10 92.01	Clarify environmental liquids generated	Withdraw expired/Superseded by DCN 5-21000-OPS-FO.10 91.02
FO.16 92.01	Change in monitoring requirements for bedrock work	New DCN

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January 21, 1992

ADMIN RECORD

REVIEWED BY: [Signature]
By: [Signature]
Date: 1/25/92
A-SW-000231

EMD Operating Procedures Manual Volume III - Geotechnical

DCN #	DCN Title	DCN Comment
GT.02 92.01	Clarify unconsolidated core sample requirements	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.02 91.01
GT.03 92.01	Grout procedure clarification	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.03 91.02
GT.04 92.01	Clarification of measuring tape decontamination requirements	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.04 91.02
GT.04 92.02	Clarification of core barrel decontamination	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.04 91.01
GT.05 92.01	Surface casing clarification	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.05 91.01
GT.06 92.01	Change in penetration depth into bedrock	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.06 91.01
GT.06 92.02	Specification of auger size	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.06 91.02
GT.11 92.01	Clarification of handling of contaminated/decontaminated surface pad materials	New DCN
GT.15 92.01	Clarification of hole logging requirements	Withdraw expired/Superseded by DCN 5-21000-OPS-GT.15 91.01

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-FO
Procedure No.: Table of Contents, Rev 8
Page: 1 of 3
Effective Date: 1/20/92
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

TABLE OF CONTENTS
FOR VOLUME I: FIELD OPERATIONS

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
FO.01	Air Monitoring and Dust Control	1	08/30/91
FO.02	Transmittal of Field QA Records	2	09/23/91
FO.03	General Equipment Decontamination	1	08/30/91
DCN 91.01	Superseded by DCN 92.02	1	01/20/92
DCN 92.01	Clarification of rinsing requirements	1	01/17/92
DCN 92.02	Replace triple rinse with double rinse	1	01/20/92
FO.04	Heavy Equipment Decontamination	1	08/30/91
FO.05	Handling of Purge and Development Water	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 92.01	Clarify portected area	1	01/20/92
FO.06	Handling of Personal Protective Equipment	1	08/30/91
DCN 91.01	Approved practices for disposal of surface water monitoring PPE	1	09/19/91

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-FO
Procedure No.: Table of Contents, Rev 8
Page: 2 of 3
Effective Date: 1/20/92
Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
DCN 91.02	Superseded by DCN 92.02	1	01/20/92
DCN 91.04	Clarification of personal protective equipment surveyng	1	11/26/91
DCN 92.01	Change in PPE disposal requirements	1	01/17/92
DCN 92.02	Clarified protected area	1	01/20/92
FO.07	Handling of Decontamination Water and Wash Water	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 91.02	Superseded by DCN 92.02	1	01/20/92
DCN 92.01	Clarify definition of potentially contaminated	1	01/20/92
DCN 92.02	Clarify work area characteristics	1	01/20/92
FO.08	Handling of Drilling Fluids and Cuttings	1	08/30/91
DCN 91.01	Delete locking requirement from drum sealing	1	08/30/91
DCN 91.02	Superseded by DCN 92.02	1	01/20/92
DCN 91.03	Superseded by DCN 92.01	1	01/20/92
DCN 92.01	Clarifing spraying requirements	1	01/20/92
DCN 92.02	Clarified protected area	1	01/20/92
FO.09	Handling of Residual Samples	1	08/30/91
FO.10	Receiving, Labeling, and Handling Environmental Materials Containers	1	08/30/91
DCN 91.01	Delete use of indelible markers	1	09/26/91
DCN 91.02	Superseded by DCN 92.01	1	01/20/92

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-FO
Procedure No.: Table of Contents, Rev 8
Page: 3 of 3
Effective Date: 1/20/92
Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
DCN 92.01	Clarify environmental liquids generated	1	01/20/92
FO.11	Field Communications	1	08/30/91
FO.12	Decontamination Facility Operations	1	08/30/91
FO.13	Containerization, Preserving, Handling and Shipping of Soil and Water Samples	1	08/30/91
FO.14	Field Data Management	1	08/30/91
DCN 92.01	Expansion of sample analysis requirements	1	01/06/92
FO.15	Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)	1	08/30/91
FO.16	Field Radiological Measurements	1	08/30/91
DCN 92.01	Change in monitoring requirements for bedrock work	1	01/20/92
FO.17	Determining Out-Of-Specification Analytical Results for Environmental Samples		To Be Added
FO.18	Environmental Sample Radioactivity Content Screening	1	08/30/91
FO.19	Base Laboratory Work	1	08/30/91

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.3, Rev. 1

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Title <u>General Equipment Decontamination</u>	Date <u>(10-28-91) 1-15-92</u>	DCN Number <u>5-21000-OPS-FO.3</u> <u>92.02</u>
Expires <u>4-30-92 4/15/92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>1/20/92</u>		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	9 of 18	5.3.1 step 4.	Replace triple rinse with double rinse.

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

Industry standard is to use a total of three rinses instead of four as per this SOP.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	1/15/92	<i>[Signature]</i>	USER	X	1/15/92
				<i>[Signature]</i>	USER	X	1/15/92

Approval of Responsible Manager <i>[Signature]</i>	Date <u>1/17/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>1-30-92</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number S-21000-OPS-F0.5

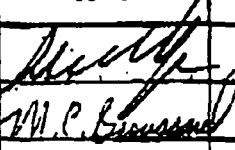
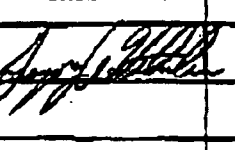
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Title HANDLING OF PURGE AND DEVELOPMENT WATER	Date 1/25/92	DCN Number S-21000-OPS-F0.05 31-01 92-02-01 1-20-92
Expires <u>upon incorporation</u> 1/30/92		Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	5 of 8	6.0 Bullets para. 2	Change: "Surface water and sediment sampling stations that have not been verified as background locations" To: "Protected Area"

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

These changes are required to minimize the potential for inadvertant contamination of uncontaminated areas and to minimize solid waste generated by the surface-water monitoring programs.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	OAPM	X	1/20/92		USER	X	1/17/92
	COM	X	12/20/92				

Approval of Responsible Manager 	Date 1/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? ASAP (1/25/92)	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.6

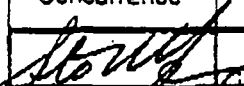
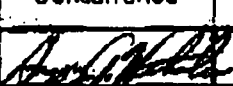

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Title Handling of Personal Protective Equipment			Date - 1/25/92	DCN Number 5-21000-OPS-FO.06 92.02	
Expires <u>Upon Incorporation 4/19/92</u> <u>1/20/92</u>			Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>					

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	4 of 10	6.0 Bullets	Add: Protected Area (PA) Delete: Surface Water and Sediment sampling stations that have not been verified as background locations.

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

The change is required to bring the revised SOP back to currently approved practices.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	OAPM	X	1/20/92		User	X	1/17/92
	EOM	X	1/20/92				

Approval of Responsible Manager 	Date 1/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1/25/92	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.7 Rev 1

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Title Handling of Decontamination Water and Wash Water		Date (10-17-91) 1-15-92	DCN Number 5-21000-OPS-FO.7 92.01
Expires Upon Incorporation <u>4-17-92</u>		Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Scope Limitation <u>none</u>			

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	7 of 8	6.1.2 paragraph 1	Change the first sentence to read "Wash water used to clean equipment, personnel and vehicles during surface soil sampling, groundwater sampling and grout mixing equipment used during post drilling activities in work areas characterized as not potentially contaminated..."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

The grout is composed of bentonite, a natural substance, mixed with RFP potable water. No downhole materials are returned to the grout plant so there is no potential for contamination.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	1/15/92	<i>[Signature]</i>	USER	X	1/15/92
				<i>[Signature]</i>	"	X	1/15/92

Approval of Responsible Manager <i>[Signature]</i>	Date 01/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1-17-92	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number: 5-21000-OPS- F0.7

Page 1 of 1

Title <u>HANDLING OF DECONTAMINATION WATER AND WASH WATER</u>				Date <u>1/25/92</u>		DCN Number <u>5-21000-OPS- F0.07</u> <u>92.02</u>	
Expires <u>4/19/92</u> 1/20/92 <u>1/20/92</u>				Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Scope Limitation <u>none</u>							

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	5 of 8	6.0 4th bullet	Delete the fourth bullet. "Surface water ..."

Justification (Reason for Change ~ Provide Numbers To Reference Corresponding Items Above)

This change is required to bring the SOP back to currently approved practices.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	<u>1/20/92</u>		USER	X	<u>1/17/92</u>
	EOM	X					

Approval of Responsible Manager 	Date <u>1/17/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>ASAP (1/25/92)</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.8, Rev. 1

Page 1 of 1

Title Handling of Drilling Fluids and Cuttings	Date (10-28-91) 1-15-92	DCN Number 5-21000-OPS-FO.8 92.01
Expires <u>4-30-92</u> <u>4/19/92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	8 of 12	6.2 paragraph 1	Replace the second sentence with: "If significant dust is generated during drilling operations, cuttings will be wetted with distilled water from a hand-pressurized sprayer and placed on the ground. Cuttings that are moist need not be sprayed."

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

Drilling operations as RFP generally have been producing moist cuttings where dust has not been a problem.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/10/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	1/15/92	<i>[Signature]</i>	" "	X	1/15/92
				<i>[Signature]</i>	" "	X	1/15/92
Approval of Responsible Manager <i>[Signature]</i>				Date 6/1/92		Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
						If Yes, By What Date? 1-30-92	
						Date Posted	

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS- F0.8

Page 1 of 1

Title HANDLING OF DRILLING FLUIDS AND CUTTINGS			Date 1/25/92		DCN Number 5-21000-OPS-F0.08 92.02		
Expires Upon Incorporation 4/19/92 to 11/24/92			Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Scope Limitation							

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	6 of 12	6.0 para 1	<p>Change bullet: "Surface water and sediment sampling stations that have not been verified as background locations"</p> <p>To: "Protected Area"</p>

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

These changes are required to minimize the potential for inadvertant contamination of un contaminated areas and to minimize solid waste generated by the surface-water monitoring programs.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	1/20/92		USER	X	1/17/92
	EOM	X	1/20/92				

Approval of Responsible Manager 	Date 1/12/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? ASAP (1/25/92)	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.10

Page 1 of 1

Title RECEIVING, LABELING, AND HANDLING ENVIRONMENTAL MATERIALS CONTAINERS				Date 1/25/92		DCN Number 5-21000-OPS-FO.10 92.01	
Expires <u>Open Incorporation</u> 4/17/92 <u>1/20/92</u>				Procedure Revision Required <input type="checkbox"/> Yes <input type="checkbox"/> No			
Scope Limitation <u>none</u>							

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	12 of 20	7.2.1	<p>Change: "Environmental liquids generated within the following areas will be characterized as potentially contaminated:</p> <ul style="list-style-type: none"> • Surface water and sediment sampling stations which have not been verified as background locations • Work areas where drilling activities are being conducted <p>To: "Environmental liquids generated within work areas where drilling activities are being conducted will be characterized as potentially contaminated."</p>
2	15 of 20	7.2.1 second to last para.	<p>Change: "For surface water field activities characterized as background stations. (uncontaminated),...."</p> <p>To: "For surface water field activities..."</p>

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

These changes are required in order to minimize the potential for inadvertant contamination of uncontaminated areas and to minimize the amount of effort required to manage solid waste associated with the surface-water monitoring programs.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	OAPM	X	1/20/92		USER	X	1/17/92
	EOM	X	1/20/92				

Approval of Responsible Manager 	Date 1/17/92	Is Posting Req? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? ASAP (1/25/92)	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-FO.16, Rev. 1

Page 1 of 1

Title Field Radiological Measurements			Date 1/14/92		DCN Number 5-21000-OPS-FO.16 92.01		
Expires <u>4/19/92</u> <i>to 4/20/92</i>			Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Scope Limitation <u>Areas free of chemical and radiological contamination</u>							

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	14 of 16	6.3.2.3 3rd paragraph	Change 1st sentence to: "Core intervals in known IHSSs, the Americium Zone, Identified Groundwater Plume areas and in areas where surface contamination has been detected will be monitored and the results recorded."
2	14 of 16	6.3.2.3	<p>Add the following final paragraphs (make new section in next revision):</p> <p>"The following requirements will apply during bedrock drilling after isolating alluvium from bedrock at sites in non-IHSS areas when all these conditions apply:</p> <ul style="list-style-type: none"> • there has been no historical contamination • surface contamination was not detected during the pre-work site survey • no contamination was detected in the alluvium. <p>Once the alluvium has been isolated from the bedrock as per SOP GT.3. Isolating Bedrock from Alluvium with Grouted Surface Casing, the exclusion zone will be kept for safety and site control purposes only. Egress from the area will be allowed without decontamination and radiological screening of personnel or equipment. Swipe sampling will be performed on the interior of each core barrel and the results will be used to properly handle these materials. In the case of a field detection, core or cuttings will be handled as per sections 6.3.2.2.1 and 6.3.2.3. Spot checks of downhole geophysical equipment will also be conducted as a control measure. Periodic screens of personnel will be conducted during the day and an end-of-day personnel frisk will be performed to insure that if any contamination is present, it does not leave the site via workers."</p>

Justification (Reason for Change -- Provide Numbers To Reference Corresponding Items Above)

Bedrock drilling in historically uncontaminated areas where the alluvium has been isolated from the bedrock with surface casing has never yet encountered contamination. Therefore, less strict monitoring requirements are in order.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/17/92
<i>[Signature]</i>	EOM	X	1/20/92	<i>[Signature]</i>	User	X	1/17/92

Approval of Responsible Manager <i>[Signature]</i>	Date 01/20/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1/21/92	Date Posted
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ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 14
Page: 1 of 4
Effective Date: 01/20/92
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH
INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

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FOR VOLUME III: GEOTECHNICAL

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
GT.01	Logging Alluvial and Bedrock Material	1	08/30/91
DCN 91.01	Recording lithologic descriptions and securing core boxes	1	11/15/91
DCN 91.02	Clarification of log approval for multi-use wells	1	12/03/91
GT.02	Drilling and Sampling Using Hollow Stem Auger Techniques	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 91.02	Correction of well location for low Alluvial thickness	1	11/06/91
DCN 91.03	Ten foot long core barrels	1	11/15/91
DCN 92.01	Clarify unconsolidated core sample requirements	1	01/20/92
GT.03	Isolating Bedrock from Alluvium with Grouted Surface Casing	1	08/30/91
DCN 91.01	Superseded by DCN 91.03	1	12/12/91
DCN 91.02	Superseded by DCN 92.01	1	01/20/92

**ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL**

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 14
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Effective Date: 01/20/92
Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
DCN 91.03	Change in criteria for cement grouting	1	12/12/91
DNC 92.01	Grout procedure clarification	1	01/20/92
DCN 91.04	Depth of casing emplacement	1	12/17/91
DCN 91.05	Addition of Grout Ports	1	12/19/91
GT.04	Rotary Drilling and Rock Coring	1	08/30/91
DCN 91.01	Superseded by DCN 92.02	1	01/20/92
DCN 91.02	Superseded by DCN 92.01	1	01/20/92
DCN 91.03	Superseded by DCN 91.04	1	12/17/91
DCN 91.04	Clarification of the use of super gel-x	1	12/17/91
DCN 92.01	Clarification of measuring tape decontamination requirements	1	01/20/92
DCN 92.02	Clarification of core barrel decontamination	1	01/20/92
GT.05	Plugging and Abandonment of Boreholes	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 92.01	Surface casing classification	1	01/20/92
GT.06	Monitoring Wells and Piezometer Installation	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 91.02	Superseded by DCN 92.02	1	01/20/92
DCN 91.03	Superseded by DCN 91.06	1	11/08/91
DCN 91.04	Low Alluvial thickness wells	1	11/06/91
DCN 91.05	Superseded by DCN 91.08	1	11/15/91

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-GT
Procedure No.: Table of Contents, Rev 14
Page: 3 of 4
Effective Date: 01/20/92
Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
DCN 91.06	Change in filter pack guidance	1	11/08/91
DCN 91.07	Decontamination for site-wide geological chracterization	1	11/15/91
DCN 91.08	Figure replacement (GT.6-1)	1	11/15/91
DCN 91.09	Sampling with center bit drilling	1	12/03/91
DCN 92.01	Change in penetration depth into bedrock	1	01/20/92
DCN 92.02	Specification of auger size	1	01/20/92
GT.07	Logging and Sampling of Test Pits and Trenches	1	08/30/91
GT.08	Surface Soil Sampling	1	08/30/91
DCN 91.01	Clarification supplementation of GT.08 - Surface Soil Sampling	1	11/26/91
DCN 92.01	Soil core sampling revision	1	01/02/92
GT.09	Soil Gas Sampling and Field Analysis	1	08/30/91
GT.10	Borehole Clearing	1	08/30/91
GT.11	Plugging and Abandonment of Wells	1	08/30/91
DCN 92.01	Clarification of handling of contaminated/ decontaminated surface pad materials	1	01/20/92
GT.15	Geophysical Borehole Logging	1	08/30/91
DCN 91.01	Superseded by DCN 92.01	1	01/20/92
DCN 92.01	Clarification of hole logging requirements	1	01/20/92
GT.17	Land Surveying	1	08/30/91
GT.18	Surface Geophysical Surveys	1	08/30/91
GT.19	Field Gas Chromatographs	1	08/30/91

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-GT
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Organization: Environmental Management

<u>Procedure No.</u>	<u>Title</u>	<u>Rev. No.</u>	<u>Effective Date</u>
GT.20	Procedures for Soil Interstitial Water Sampling and Sampler Installation	1	08/30/91
GT.21	Cone Penetrometer Testing	0	12/19/91

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.2, Rev. 1

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Title <u>Drilling and Sampling Using Hollow-Stem Auger Techniques</u>	Date <u>(10-28-91) 1-15-92</u>	DCN Number <u>5-21000-OPS- GT.2 92.01</u>
Expires <u>4-30-92 4/15/92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>1/20/92</u>		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	9 of 14	5.3.1 paragraph 1	Add to end of first paragraph: "Unconsolidated core samples need not be peeled before sampling."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

It is not possible to peel unconsolidated samples. It is also not possible to state that any part of an unconsolidated sample was or was not in contact with the sampler at any given time.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	1/15/92		USER	✓	

Approval of Responsible Manager <i>[Signature]</i>	Date <u>01/07/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>1-30-92</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.3 Rev. 1

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Title <u>Isolating Bedrock from Alluvium with Grouted Surface Casing</u>	Date <u>(10-22-91) 1-15-92</u>	DCN Number <u>5-21000-OPS-GT.3</u> <u>92.01</u>
Expires <u>4-22-92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	6 of 9	5.3 paragraph 1	Replace the first sentence with: Surface casing will be installed by placing the casing into the borehole, filling the casing with cement and then forcing the cement from within the casing by pushing a rubber plug down the casing thus displacing the cement out through cement ports at the bottom of the casing.
2	8 of 9	5.3 part 2	Delete this section.
3	8 of 9	5.3 part 3	Renumber this to part 2.
4	8 of 9	5.3 part 4	Renumber this to part 3. Insert "through the augers" at the end of the first sentence.
5	8 of 9		Insert as part 4: Remove the augers and pump the cement mixture into the casing using a tremie pipe until undiluted cement is present at the top of the casing.
6	8 of 9	5.3 part 5	Remove the first part of the first sentence where it states: "Once the casing is at the bottom of the borehole." Change "force it down to the bottom of the casing by using drill rods..." to "force it down to the bottom of the casing by using drill rods or water pressure." Add to the end of the paragraph "Enough cement will be used to ensure that cement will rise to ground level when displaced from casing."

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

Pumping grout down the hole after placing casing ensures that casing is at the bottom of the borehole, and minimizes borehole and casing problems.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	1/15/92		USER	X	

Approval of Responsible Manager <i>[Signature]</i>	Date <u>01/17/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>1-22-92</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.4, Rev. 1

Page 1 of 1

Title <u>Rotary Drilling and Rock Coring</u>	Date (10-28-91) 1-15-92	DCN Number 5-21000-OPS- <u>GT.4</u> <u>92.01</u>
Expires <u>4-30-92</u> <u>4/19/92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>Sitewide Geologic</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	8 of 10	6.0 paragraph 1	Add the following to the end of the paragraph: "When coring bedrock using water as a circulating medium, no decontamination of measuring tapes is necessary between coring runs. The measuring tapes will be decontaminated after each boring is complete."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

The potentially contaminated alluvium has already been isolated from the bedrock. In addition, the borehole is filled with liquid and there is constant communication between the drilling fluid, the exposed borehole and the measuring tapes.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	1/20/92		User	X	1/15/92
	EOM	X	1/15/92		USER	X	

Approval of Responsible Manager 	Date 01/17/92	Is Posting Req? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1-30-92	Date Posted
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DCN Form 001

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.4, Rev. 1

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Title Rotary Drilling and Rock Coring	Date (10-18-91) 1-15-92	DCN Number 5-21000-OPS-GT.4 92.02
Expires <u>4-18-92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>Sitewide Geologic</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	8 of 10	6.0 paragraph 1	Add the following to the end of the paragraph: "When coring bedrock using water as a circulating medium, no decontamination of core barrels is necessary between coring runs. The core barrels will be decontaminated after each boring is complete."

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

The potentially contaminated alluvium has already been isolated from the bedrock. In addition, the borehole is filled with liquid and there is constant communication between the drilling fluid, the exposed borehole and the core barrels..

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	1/20/92		User	X	1/15/92
	EOM	X	1/15/92				

Approval of Responsible Manager 	Date 01/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1-18-92	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.5, Rev 1

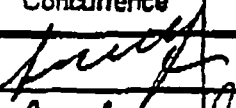
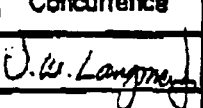
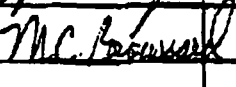
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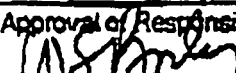
Title Plugging and Abandonment of Boreholes			Date (10/22/91) 1-15-92	DCN Number 5-21000-OPS- <u>GT.5</u> <u>92.01</u>
Expires <u>Upon Incorporation</u> <u>4/15/92</u> ←			Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Scope Limitation <u>None</u>				

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	6 of 8	Parag. 1, line 4	Insert the following sentence AFTER ...approximately 3 feet. "If surface casing has been set in the borehole, see following paragraph."
2	6 of 8	Parag. 2	Change "A grouted surface casing" to "A cemented surface casing".

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

Wording change is to better define intent of procedure.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	1/20/92		User	X	1/15/92
	ECM	X	1/15/92				

Approval of Responsible Manager 	Date 01/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date?	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.6 Rev 1

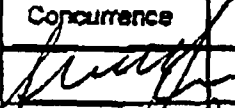

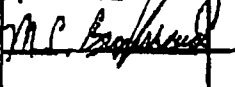
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Title Monitoring Wells and Piezometer Installation	Date (10-4-91) 1-15-92	DCN Number 5-21000-OPS-GT.6 92.01
Expires <u>4-15-92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	5 of 17	3	Substitute "approximately one foot" for "approximately 6 inches or less"

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

Industry standard is 1 foot into bedrock.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	11/20/92		User	X	1/15/92
	EOM	X	1/15/92				

Approval of Responsible Manager 	Date <u>1/17/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>1-15-92</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.6 Rev 1

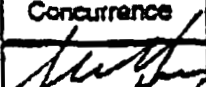
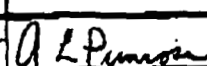

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Title <u>Monitoring Wells and Piezometer Installation</u>	Date <u>(10-4-91) 1-15-92</u>	DCN Number <u>5-21000-OPS-GT. 6</u> <u>92.02</u>
Expires <u>Upon Incorporation 4-15-92</u> Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>Sitewide Characterization Program only.</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	6 of 17	1	For the sitewide geologic characterization program only, substitute "auger 2 feet into bedrock to provide a pilot hole for a 2-foot deep sediment sump." for "an appropriately sized drive sampler will be driven 2 feet into the claystone bedrock to provide a pilot hole for a 2-foot deep sediment sump."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

For the sitewide program, claystone smearing does not seem to be a problem.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	x	<u>12/20/92</u>		User	x	<u>1/15/92</u>
	EoM	x	<u>1/15/92</u>		USER	x	

Approval of Responsible Manager 	Date <u>9/17/92</u>	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? <u>1-15-92</u>	Date Posted
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ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT11, Rev. 1

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Title Plugging and Abandonment of Wells	Date 1-15-92	DCN Number 5-21000-OPS-GT. 11 92.01
Expires <u>4-15-92</u>		
Procedure Revision Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>none</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	6 of 12	5.2	Add a new paragraph to the end of this subsection: "Regardless of the method selected for well abandonment, all wells will have the original pad removed (if present) at the start of abandonment operations. Concrete well pads will be monitored for chemical and radiological contamination, contaminated areas will be marked with paint pens and then the pads will be broken up in such a way as to isolate the contaminated areas using appropriate tools such as sledge hammers, pick axes or jackhammers. The underside of the pad will then be monitored for chemical and radiological contamination and all contaminated areas will be marked as above. All uncontaminated materials from well pads will be drummed and sent to the landfill. All contaminated materials will be decontaminated in the field. After decontamination, the materials will be monitored and clean material will be drummed and sent to the landfill. Material that is not monitored as clean will be stored in drums on pallets at the site pending further characterization. Drums will be labeled as per SOP FO.10 Receiving, Labeling and Handling Environmental Materials Containers."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

The surface pad must be destroyed and removed in order to remove the casing and install a new surface pad as per SOP.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	1/15/92
<i>[Signature]</i>	EOM	X	12/13/92	<i>[Signature]</i>	User	X	1/15/92
				<i>[Signature]</i>	User	X	1/15/92
Approval of Responsible Manager <i>[Signature]</i>				Date 01/17/92		Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				If Yes, By What Date?		Date Posted	

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GT.15 Rev 1.

Page 1 of 1

Title Geophysical Borehole Logging	Date (10-3-91) 1-15-92	DCN Number 5-21000-OPS- GT. 15 92.021
Expires <u>Upon Incorporation</u> 4-15-92 Procedure Revision Required <input type="checkbox"/> Yes <input type="checkbox"/> No		
Scope Limitation <u>NONE</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	4 of 5	2	Substitute "Every effort will be made to complete logging in one day." for "No hole will be left unlogged at the end of the day."

Justification (Reason for Change – Provide Numbers To Reference Corresponding Items Above)

To minimize rig downtime, logging should begin at the earliest opportunity, even if in the afternoon. Logging should not be delayed so as to be completed in one day.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	1/20/92	<i>[Signature]</i>	User	X	4/15/92
<i>[Signature]</i>	EOM	X	1/15/92				

Approval of Responsible Manager <i>[Signature]</i>	Date 01/17/92	Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, By What Date? 1-15-92	Date Posted
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